



# Air Land Sea Application Center

Joint Base Langley-Eustis, Virginia

<https://www.alsa.mil>

## Failing Forward

# Disaggregated Command and Control in Strategic Competition

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Mission command, or mission-type tactics, is the foundation upon which United States military command authority is built. Mission-type tactics are employed by ensuring subordinate commanders clearly understand operational objectives, have the forces to achieve those objectives, and are given the authorities to deviate execution based on tactical advantage.<sup>1</sup> American history repeatedly proves action, even in the absence of clear orders is often more important than delay. One example of mission-type tactics occurred at Gettysburg. On the morning of 1 July 1863, Union cavalry under the command of Brigadier General John Buford recognized the importance of the high ground south of Gettysburg. Despite General Grant’s orders to identify enemy locations and report their whereabouts, General Buford ordered his cavalry to dismount and defend the high terrain. General Buford understood Grant’s orders, but he recognized the tactical advantage of the terrain and its impact on achieving General Grant’s operational objectives thus executing mission-type tactics to secure the terrain and advantage for Union troops.<sup>2</sup> Whatever autonomy and flexibility commanders are given to execute mission-type tactics, their actions must be enabled by effective command and control structures. As the Air Force aims to create an environment for mission-type tactics to flourish it is struggling to create an effective command and control structure and should revisit past successful models to guide current tactics. One successful example is the deployment of numbered air forces (NAFs) during World War II to enable fighter and bomber operations across the European theater.<sup>3</sup> Today, the “lead wing” concept models World War II NAFs and is the best structure for enabling the Air Force’s intent of disaggregated C2 nodes controlling combat aircraft from distributed deployed locations.

### Enabling Effective C2 in a Lead Wing

In a return to strategic competition, the ability to quickly maneuver and employ agile combat forces is key to survivability. The United States Air Force continues investing heavily to distribute combat forces through agile combat employment, enable disaggregated C2 nodes, and promote mission-type tactics thereby increasing unpredictability and driving cognitive delays in enemy decision making. Agile combat employment (ACE) is becoming the Air Force’s model for projecting combat airpower from multiple geographic locations, thus ensuring survivability through increased

targeting dilemmas.<sup>4</sup> The new lead wing deployment model attempts to empower tactical leadership to execute mission-type tactics through the delegation of both command and control authorities.<sup>5</sup> This method enables agility and the continuous employment of combat airpower even if lacking specific orders published through the air tasking order (ATO). Currently, the Air Force has given lead wing commanders authority to conduct mission-type tactics, but these authorities have yet to be met with upgraded C2 capabilities nor the Airmen to effectively C2 lead wing assets in combat operations. Starting in World War II, the lead maneuver unit of the Air Force became the NAF, and NAF commanders conducted C2 of forces through assigned air operations centers (AOCs). However, AOCs now reside at the Major Command level effectively removing the primary C2 structure from both the NAF and lead wings. It is time for the Air Force to invest both dollars and manpower into rebuilding effective C2 capabilities within lead wings and across distant areas of responsibility (AORs).

In a bid to rectify a lack of C2 capabilities in lead wings, the Air Force continues to invest heavily in replacing the Theater Battle Management Core System as the legacy software for producing the ATO and airspace control order (ACO). The upgraded software is application-based and meant to be easily accessible which enables continuity of operations by identifying fallback AOCs in the event of crippling cyberspace or kinetic attacks.<sup>6</sup> Investments in cloud computing are meant to enable continuous backup and accessibility of the most current air operations information. Cloud computing enables fallback AOCs, or lead wings to immediately begin controlling current air operations with minimal delay.<sup>7</sup> Additionally, the Air Force is investing in connecting worldwide sensors in all domains to the Advanced Battle Management System. This system is meant to collect, filter, and distribute information across network-enabled units to provide a more accurate common operating picture to commanders at all echelons of warfare.<sup>8</sup> If successful, this cloud-based network provides the framework for distributed C2 operations and gives lead wing commanders the technology to manage current ATO operations when necessary. Although innovative, a new software solution only solves part of the issue. Lead wings still lack the expertise and manpower needed to control aircraft across vast distances while continuing to generate combat airpower. The Air Force has a readily available pool of experts in its current air support operations center (ASOC) and tactical air control party (TACP) Airmen. These Airmen are extensively trained in integrating joint firepower, controlling tactical aircraft, and enabling joint network connectivity who could quickly be trained to enable disaggregated control of lead wing aircraft using innovative software solutions. These Airmen could direct aircraft to and from appropriate logistical hubs, pass updated intelligence via digital networks, control strikes in defense of friendly bases, and act as a bridge between other Service's maneuver units and lead wing operational planners.

### **Realigning TACP in Support of Lead Wing Operations**

As the Air Force realigns resources against national security objectives, the TACP community is facing extensive changes. Current TACP manpower grew during surge operations in Iraq and Afghanistan, and as the United States shifts focus away from those nations and towards pacing threats the TACP community finds itself overmanned. As the TACP community searches for mission relevancy against near-peer enemies, it

has tried to reimagine TACP Airmen as all-domain controllers and has begun pushing a new concept called all-domain control teams. The introduction of all-domain control teams as highly mobile C2 teams with the authority to enable effects across all domains of warfare was meant to support the Air Force's vision of disaggregated C2 nodes. The intent is to enable teams of less than 10 personnel, from multiple services and career fields to "command and control functions including defending bases, guiding air campaigns, coordinating humanitarian assistance, or providing support for the U.S. Army. Dozens of these teams, operating in redundant networks, could provide a survivable means of command and control against adversaries with sophisticated targeting capabilities".<sup>9</sup> A joint terminal attack controller (JTAC) from the 13 Air Support Operations Squadron described this as allowing the AOC to "fail forward" and enabling all-domain control teams to continue executing the ATO until AOC operations resume.<sup>10</sup> Although novel in concept, the best location for all-domain control teams is with lead wing headquarters where the domain expertise can be integrated with operational planners to better enable effective C2 of current ATO operations. Integrating all-domain control teams with lead wing agencies ensures joint tenets of effective C2 are met while enabling mission-type tactics by preserving unity of command and enabling the AOC to fail forward when needed.



Airmen work in the 618th Air and Space Operations Center (Tanker Airlift Control Center) controlling global mobility operations at Scott Air Force Base, Ill. Dec. 16, 2010. (Photo by: Capt. Justin Brockhoff, USAF)

## Joint Tenets of Effective Command and Control

Current doctrine defines ten tenets to effective command and control. As strategic competition drives the need for innovation, it is important to link advancements in technology with proven doctrine or risk repeating hard lessons learned. It is vital new command and control systems adhere to the joint tenets of command and control as disaggregation and decentralization risk adding complexity and uncertainty to an already congested C2 environment. Although joint doctrine identifies ten tenets to effective C2, those of mutual trust, information management and knowledge sharing, simplicity, and situational awareness are most at risk by disaggregated C2.<sup>11</sup> Isolated teams, distributed across the battlespace, and reliant on satellite or radio communication to maintain situational awareness introduce enormous risks to the tenets of effective command and control.<sup>12</sup>

Agile combat employment doctrine assumes that combat aircraft will effectively converge at a designated time and place to mass firepower in pursuit of operational objectives. To achieve this convergence, the Air Force participates in large-scale exercises such as Red Flag. In fact, large-scale combat exercises are used to qualify combat mission commanders, who are given authorities from the combined forces air component commander (CFACC) to make real-time decisions during ATO execution. Flying mission commanders are only delegated authorities after establishing mutual trust and demonstrating tactical competency. In addition to developing mission commanders capable of leading joint air operations, the Air Force also aligns air operations support units with Army maneuver units. The two Services train together, deploy together, and often live on the same installation with the purpose of building relationships and establishing mutual trust to enable the integration of air and ground fires in support of Army maneuver. Mutual trust is a joint tenet of C2, and establishing mutual trust allows units to work cohesively based on expected behaviors developed during routine day-to-day activities and joint training exercises.<sup>13</sup> Although the high tempo of counterinsurgency deployments has broken alignment, current TACP leadership argues new technologies reduce this risk to acceptable levels and are pushing to break alignment of TACP and Army forces permanently. One paper suggests the past alignment model is no longer needed because upgrades in technologies better enable beyond-line-of-sight communications, allow for effective collaboration with other Services, and enable the timely distribution of information to allow a common operating picture across the entire area of operations.<sup>14</sup> Network-enabled communications have grown tremendously, but the lack of aligned forces will quickly lead to a breakdown in mutual trust across the joint force and negatively affect joint C2 of forces. Airmen assigned to support Army maneuver units must remain aligned with the supported unit. As such, airmen assigned to support lead wing C2 should be assigned full time to the supported wing. Mutual trust built from enduring relationships and joint exercises is the best method to ensure integrated joint operations as the Air Force moves towards lead wing operations and disaggregated C2 networks.

The distribution of assets and C2 structures across the AOR enables survivability, but it also complicates the ability to share and manage information. Information management and sharing is a key tenet of command and control which enables enhanced situational awareness.<sup>15</sup> The current theater air-ground system (TAGS) demonstrates risks



associated with poorly networked command and control structures. The Air Force's TBMCS still produces the ATO and ACO using United States Messaging Text Format (USMTF) 2004. These messages are digitally used by numerous joint fires systems to include the Joint Automated Deep Operations Coordination System, the Advanced Field Artillery Tactical Data System, and the Tactical Airspace Integration System.<sup>16</sup> However, each of these systems operates with different versions of USMTF, and therefore, humans must be present to translate messages and ensure the systems execute the intended operation. The inability of joint fires C2 systems to connect and share information degrades situational awareness at each level of command. In a disaggregated C2 structure, the ability to connect with multiple C2 systems across the joint force is vital to building effective situational awareness. Situational awareness is the linchpin to delegating mission command authority to lower echelons. A commander's ability to develop an accurate common operating picture enables effective decision making and mission-type tactics. A lead wing structure, embedded with personnel from all domain control teams enables the effective building of a common operating picture necessary to delegate, or accept mission command authorities.



U.S. service members participating in the first VIRTUAL FLAG exercise dedicated to training the Joint Air Ground Integration Center's (JAGIC) command and control work in the the 705th Combat Training Squadron's Distributed Mission Operation Center, Kirtland Air Force Base, New Mexico, Aug. 23-27, 2021. (Photo by: Debora Henley, USAF)

Simplicity is perhaps the tenet most at risk with disaggregated command and control nodes, and the deployment of all-domain control teams creates a burdensome layer of control when the Air Force already has established AOCs, lead wings, ASOCs, JTACs, and airborne mission commanders. Currently, joint command and control is achieved through Service-centric units connected to sister Services by digital networks and liaison units. The AOC has an Army battlefield coordination detachment, along with Navy, Marine, special forces, and Space Force liaisons to help plan and execute air operations.<sup>17</sup> Each Service's operational and tactical C2 structures rely on liaison organizations to bring Service-specific expertise to planning and execution processes. These liaisons effectively enable pathways across the Service-specific lanes of C2. Simplicity means limiting the number of C2 units to those necessary for maintaining positive control over deployed forces. Adding an additional C2 structure through all-domain control teams creates an unnecessary layer of control on air assets operating within CFACC airspace, which do not require detailed integration with friendly forces. Therefore, publishing clear authorities for lead wing commanders and airborne mission commanders through rules of engagements (ROE) enables disaggregated C2 without the addition of new controlling agencies. These ROEs enable lead wing commanders to make tactical decisions focused on the commander's intent while bounded by the authorities placed upon him or her. Additionally, the designated mission type brings with it specific authorities defined through doctrine. For example, close air support missions require detailed integration with ground force commanders and require the control of assets by joint terminal attack controllers. Whereas the designation as a strike coordination and reconnaissance (SCAR) mission tells the pilot he or she must check into the AOR with the SCAR mission commander and guides which authorities the aircrew possess. The effective delegation of authorities allows the above controlling organizations to execute mission-type tactics, achieving the Air Force's desired end state.

## **Conclusion**

To best empower lead wings to effectively C2 distributed forces, additional C2 Airmen and networks should be assigned to the lead wing deployment team. The lead wing fulfills the disaggregation of C2 networks and allows for the AOC to fail forward while honoring the joint tenets of C2. The integration of surplus air support operations units as all domain control teams within the lead wing structure provides the manpower needed to enable effective C2 of forces. Instead of trying to build small, mobile all-domain control teams, the Air Force should focus on enabling mission command and promoting mission-type tactics of distributed combat forces through well-equipped and trained lead wings. With these integrators embedded in operational staffs, lead wing commanders gain valuable knowledge on joint C2 systems, service-specific weapons systems, and the best methods to integrate effects across the joint force and within all domains. The question now becomes, in the face of peer adversaries and the return to strategic competition how does the Air Force better employ TACP Airmen? Does the Air Force use TACP Airmen as traditional controllers of air assets, or does the Air Force capitalize on years of joint integration experience to develop integration experts built to enable lead wing operations integrated within the joint area of operations?

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## Endnotes

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- <sup>1</sup> Joint Publication 1, *Doctrine of the Armed Forces of the United States*. 25 March 2013, V-15.
- <sup>2</sup> Wittenberg, Eric J. *The Devil's to Pay: John Buford at Gettysburg*. 19 October 2014.
- <sup>3</sup> *Air Force Combat Units of World War II*. United States Air Force Historical Advisory Committee, 1 Sept 1983.
- <sup>4</sup> Mulgund, Sandeep PhD. *Command and Control for Agile Combat Employment*. Online Air University, 30 August 2021.
- <sup>5</sup> Leslie, Carlin. *Agile Flag paves way for Lead Wings*. Online Air Force News, 3 November 2020.
- <sup>6</sup> Volpe, Carrie. *609<sup>th</sup> AOC optimizes ATO production, first to use KRADOS operationally*. Online Air Force News, 7 May 2021.
- <sup>7</sup> Coleman, Frederick. *Beyond the AOC-Building the Next Generation of Operational Command and Control*. Online Air University, 28 October 2021.
- <sup>8</sup> Pope, Charles. *With its promise and performance confirmed, ABMS moves to a new phase*. Online Air Force News, 21 May 2021.
- <sup>9</sup> Cowie, *Command and Control*, 2 July 2021.
- <sup>10</sup> Bold Quest 2021 discussion on all domain command and control tactics.
- <sup>11</sup> Joint Publication 1, *Doctrine*. V-14-17.
- <sup>12</sup> Coleman. *Beyond the AOC*. 28 October 2021
- <sup>13</sup> Joint Publication 1, *Doctrine*. V-17.
- <sup>14</sup> Cowie, *Command and Control*, 2 July 2021.
- <sup>15</sup> Joint Publication 1, *Doctrine*. V-15.
- <sup>16</sup> ATP 3-52.1/MCRP 3-20F.4/NTTP 3-56.4/AFTTP 3-2.76, *Multi-Service Tactics, Techniques, and Procedures for Airspace Control*. Air Land Sea Application Center, February 2019.
- <sup>17</sup> ATP 3-52.2/MCRP 3-20.1/NTTP 3-56.2/AFTTP 3-2.17, *Multi-Service Tactics, Techniques, and Procedures for the Theater Air-Ground System*. Air Land Sea Application Center, May 2020.